

# Human Circles

---

**Reporting Category** Measurement

**Topic** Identifying and describing parts of a circle

## Materials

- Posters labeled “radius,” “diameter,” “center,” “circumference,” and “chord”
- Large index cards labeled “A,” “B,” “C,” “D,” “E,” “F,” and “G”
- Measuring tape

## Vocabulary

*radius, diameter, center, circumference, chord*

## Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Gather students in a circle. Have one student sit in the center of the circle, and call him/her point A. Explain that a *circle* is a set of points on a flat surface (plane) with every point equidistant from a given point called the *center*. Tell students that they each represent a point on the circle.
2. Instruct students to measure the distance from the center to several points on the outside edge. Record the distances and adjust so each point is equidistant. Explain that a line segment from the center of the circle to any point on the circle is called the *radius* of the circle.
3. Select a student from the circle to be point B. Pass the measuring tape from point B through the center to a student on the opposite side of the center from point B, and call this student point C. Measure the distance from point B to point C, and record. Guide students to understand that this measurement should be twice the radius. Explain that this is the *diameter* or a *chord* that goes through the center of a circle, and two radii end-to-end form a diameter of a circle.
4. Select another student from the circle to be point D and one to be point E. Pass the measuring tape from point D to point E, and tell students that they are forming a chord. A *chord* is a line segment connecting any two points of a circle. Select other students to be points F and G to create another chord. Emphasize that not all chords are diameters.
5. Have one student stand up and run around the outside or perimeter of the circle. Explain that this is the *circumference* of the circle.
6. Review and switch students so each has a chance to become each part of the circle.
7. Have students return to their desks and record a definition of each part of the circle in a learning log. Have students write to a friend describing each part.

## **Assessment**

- **Questions**
  - What is the difference between a radius and a diameter?
  - What is the difference between a chord and a diameter?
- **Journal/Writing Prompts**
  - Name and describe the parts of a circle.
  - Explain the relationship between circumference and the center of a circle.
- **Other**
  - Give each student a geoboard and rubber bands. Ask students to demonstrate a radius, diameter, chord, and circumference.
  - Give each student a paper circle. Have them fold the circles in half and label the folds (diameter). Have students fold the circles in half again and name the part from the center to the edge of the circle (radius). Ask students to name the point where the lines cross (center). Have students fold their circles so that they are not in half and label the folds (chord).

## **Extensions and Connections (for all students)**

- Cut oranges in half. Have students measure the circumference, diameter, radius, and a chord. Compare the measurements.
- Have students sit in a circle with one person representing the center point. Have students toss a beanbag to the person across from them to represent a diameter, to the center to show a radius, and to anyone on the circle to show a chord.
- Pour a small amount of bubble solution on each student's desk. Have each student stick a straw in the solution and blow a bubble until it breaks. When the bubble breaks, it will form a perfect circle. Have students measure the diameter, radius, circumference, and a chord.

## **Strategies for Differentiation**

- Use string and/or geoboards to create the circle and parts of a circle.